

FACT SHEET



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Cell Phone Towers and Cell Phones: Questions and Answers About Safety

Cell phones and cell phone towers send signals using **radio frequency (RF) energy**, or radiation, just like radio, television, pagers and other wireless communication devices. Many people have asked whether the RF energy from cell phones and cell phone towers is safe. This fact sheet provides you with answers to some common questions about RF energy and effects on health.



What Is Radio Frequency Energy?

RF energy is another name for radio waves. Probably the most important use for RF energy is for communication services. Radio and TV broadcasting, cell phones, pagers, cordless phones, and satellite communications are just a few of the many communication uses of RF radiation. A microwave oven is an example of a non-communication use of RF radiation. RF waves are one form of **electromagnetic** energy. Other forms of electromagnetic energy include visible light and X-rays.



Electromagnetic energy can be described in terms of its **frequency**. The frequency is the number of waves emitted each second. Frequency is expressed in "**hertz**" (**Hz**). One Hz equals one wave per second. One megahertz (MHz) equals one million waves per second. The frequency of cell phones, cordless phones, and cell phone tower signals ranges between 800 and 2200 MHz. X-rays have much higher frequencies (above 10 million MHz). RF energy has much lower frequency than X-rays, and therefore is not able to cause the type of damage to the body that X-rays can.



Cell Phones: Are They Safe? Can They Cause Cancer?

In recent years, cell phones and cancer risks have been widely studied by researchers in the U.S. and abroad. Overall, the evidence does not indicate that cell phones cause cancer. However, there are two studies by the same researcher in Sweden that found suggestive evidence linking cell phone use and brain cancer. These results are not supported by the many more studies that have not found evidence linking cell phone use and cancer. Most scientists agree that it is wise to continue research in this area. This is because most people have not been using cell phones for very long, and cancer usually takes a long time to develop.



There are other cell phone safety issues to consider. Research studies have linked cell phone use while driving to an increased risk of a crash. The safest course is to pull off the road before making or receiving a cell phone call.



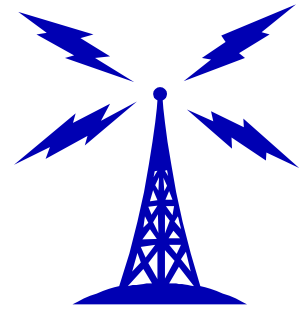
Cell Phone Towers: Is There A Health Risk?

There is general agreement in the scientific studies that RF radiation emitted from cell phone tower antennas is far too low to cause health risks as long as people are kept away from the antenna itself. It is important to be aware of the difference between the antenna (the object that produces the RF radiation) and the tower (the structure that the antenna is placed on). It is the *antenna* that people need to keep away from, not the tower. As with all forms of radiation, the strength of the radiation field decreases rapidly as one moves away from the source. Studies that have measured RF fields near cell phone towers show that RF levels are many times below safety standards. At locations where people are likely to spend time (homes or schools), RF levels from cell phone towers will not pose a health risk.





What Are The Safety Standards For Cell Phone Towers And Cell Phones?



The U.S. Federal Communications Commission (FCC) sets safety standards for RF radiation exposure for the devices it regulates, which include cell phones and cell phone towers. The FCC standards are based on safety standards developed by national and international organizations and take into account the thermal (heating) effects of RF energy. The standards also include safety factors to account for uncertainties in the scientific knowledge about other health effects from RF radiation. New cell phone towers must be approved by the CT Siting Council before they are built, and they must show that they meet FCC safety standards.



What Are Thermal Effects From RF Exposure?

It has been known for many years that exposure to *high* levels of RF radiation can be harmful because RF energy can heat the body. This is the principle by which microwave ovens cook food. Heating, or "thermal" effects on the body include eye damage (cataracts), skin burns and heat stroke. These thermal effects are the only health effects that have been clearly linked with RF radiation.

The level of RF radiation emitted from the antenna of a cell phone tower could cause thermal effects if someone climbed to the top of the tower and stood very close to the antenna, directly in the path of the RF signal. In contrast, environmental levels of RF radiation routinely encountered by the general public from cell phones and cell phone towers are far below levels needed to cause thermal effects.





What About Health Effects Other Than Thermal Effects and Cancer?

A number of studies have looked into whether exposure to low levels of RF radiation (below levels that would cause thermal effects) is linked with non cancer health effects.

Some scientists have reported links between RF exposure and headaches and changes in brain activity, brain function and sleep patterns. The changes that have been seen are very small and have no clear health significance. More studies are in progress to try to confirm these findings.



Conclusions

Current scientific research does not provide clear evidence that the low levels of RF radiation from cell phones or cell phone towers increases the risk of cancer or other health effects. RF exposures to cell phone users and to those living near cell phone towers are well below federal safety limits. Research is ongoing to ensure that current safety standards for RF radiation from cell phones and cell phone towers is adequately protective of public health. Some of this research will follow cell phone users for longer periods of time because cancer usually takes a long time to develop.

Although the current scientific information does not indicate the need for individuals to take any special precautions, people who would like to reduce their exposure to RF radiation may choose to limit their use of cell phones or use "hands-free" devices to keep mobile phones away from the head and body.



For More Information:

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